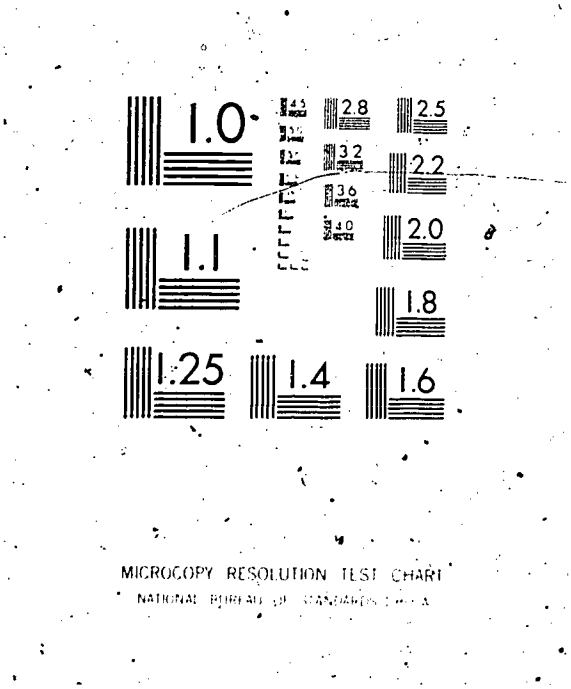
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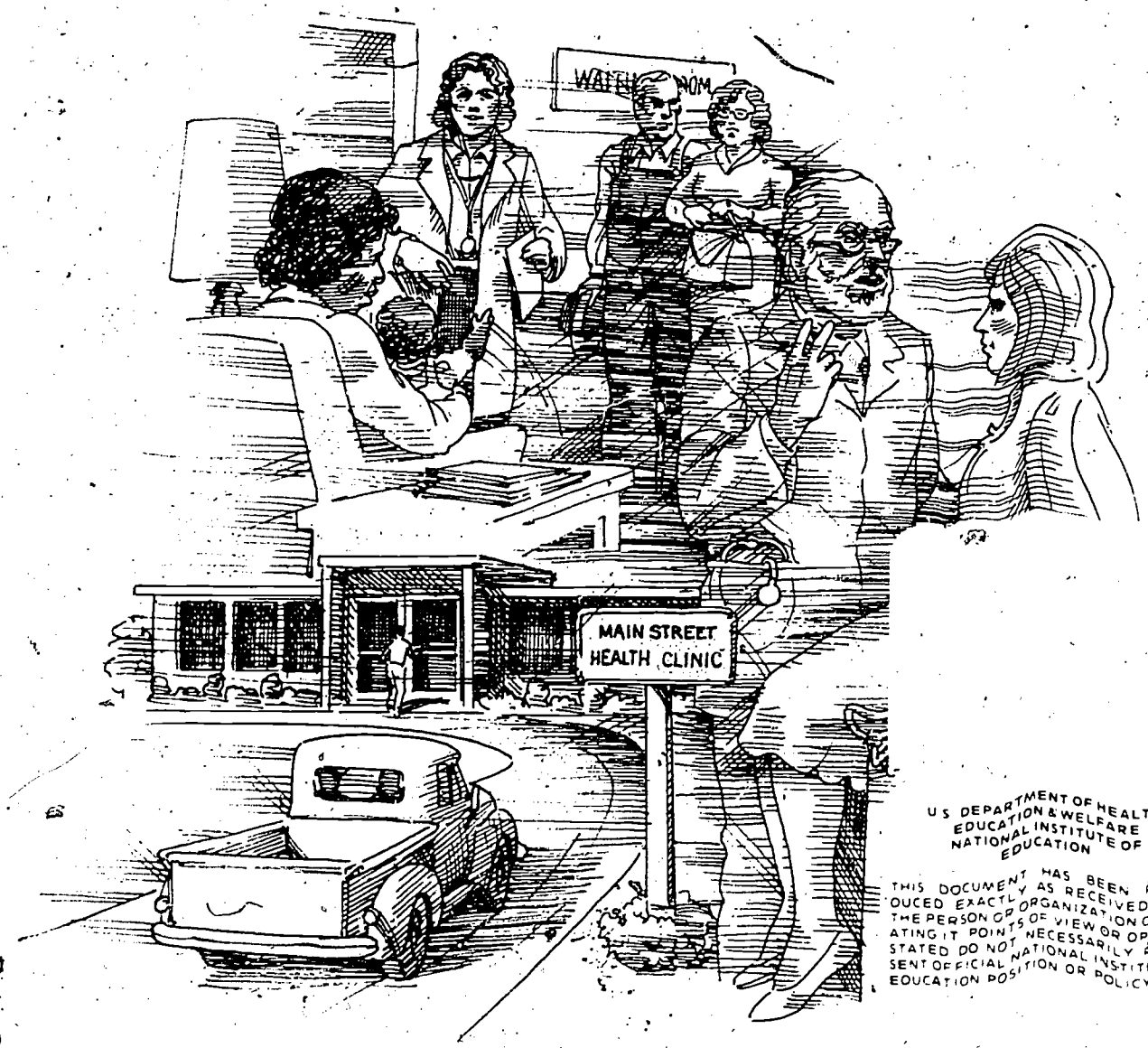
ABSTRACT

Nonmetropolitan and totally rural areas have greater unmet health needs and fewer health resources than urban areas. Blacks, American Indians, migrants, and Appalachians have specialized rural health care needs as a result of cultural isolation, poverty, and discrimination. The reversal of the rural to urban population migration has increased the strain on the health care system in all nonmetropolitan areas where the per capita distribution of physicians, medical specialists, services, and quality of facilities is significantly lower than in metropolitan areas. Communities need to develop specialized emergency medical transportation and communication, establish satellite clinics, and increase part-time physicians and midlevel health practitioners. A positive development has been the federal government's recognition of rural needs and design of eight programs to ameliorate rural health care problems: Community Health Centers, Migrant Health Centers, National Health Service Corps, Health Underserved Rural Areas, Rural Health Initiative, Rural Health Clinic Services Act, Loan Repayment, and Community Facilities Loan Programs. Under any national health insurance it will be important to recognize rural residents' health needs. The report compares four factors indicative of the condition of the health care system in both areas and shows that rural areas' lower incomes, larger aged populations, hazardous occupations, and lower educational levels contribute to poorer health care conditions. (NEC)

Health Care in Rural America

Mary C. Ahearn



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HEALTH CARE IN RURAL AMERICA, by Mary C. Ahearn. Economic Development Division; Economics, Statistics, and Cooperatives Service; U.S. Department of Agriculture. Agriculture Information Bulletin No. 428.

ABSTRACT

Nonmetropolitan areas have greater unmet health needs and fewer health resources than metropolitan areas. This report compares health needs and resources in both areas, and shows that nonmetro areas' lower incomes, larger aged populations, hazardous occupations, and lower educational levels contribute to poorer health care conditions. A positive development has been the Federal Government's recognition of problems and its programs designed to meet these special needs. It will be important to recognize rural residents' health needs under any national health insurance program.

Keywords: Health care; Rural needs; Health expenditures; Government health programs; Medical resources; Health status; Rural development.

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SUMMARY

Nonmetropolitan areas have greater unmet health needs and fewer health resources than metropolitan areas. Totally rural areas consistently have the fewest health resources per capita of all areas in the United States. These areas had less than one-third the national number of physicians per capita in 1975.

There were 71 non-Federal physicians caring for patients per 100,000 population in nonmetropolitan areas, compared to 157 in metropolitan areas in 1975. Nonmetropolitan areas had about 11 medical specialists per 100,000 population, while metropolitan areas had 31. The distribution of hospital and nursing home beds per capita is more nearly equal. However, nonmetropolitan facilities are generally older and are less likely to be accredited and to have few specialized services.

The 1969-73 infant mortality rate of 20.7 deaths per 1,000 live births in nonmetropolitan areas compares with 19.3 in metropolitan areas. The rate was higher, 21.2 per 1,000 live births, for totally rural areas adjacent to metro areas.

The reversal of the rural to urban population migration has increased the strain on the health care system in all nonmetropolitan areas, especially in the totally rural areas. The rate of change in physician supply in totally rural areas between 1970 and 1975 did not keep pace with the rate of population change; the two rates did keep pace in the rest of the Nation. Solutions specifically designed to meet these problems in totally rural areas should be substituted for blanket policies since these areas have the Nation's poorest health status.

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Health Care in Rural America

Mary C. Ahearn [1]

INTRODUCTION

An adequate level of health care is now considered a right by many people. Specifying the level of care that is considered adequate continues to be debated, however, in large part because of the high costs of health care. If the right to care is accepted, equal access to that care would seem to be a necessary corollary (7, 19, 37). 2/ At the same time, adequate health care resources are known to be essential to economic development because of their relationship to the quality of life, worker productivity, labor force participation rate, and industrial location (51, 67). A major problem facing rural areas is inadequate health resources. This report provides an overview of the present rural health care situation. It includes a description of the special health needs of rural areas and a discussion of certain contributing factors. The major Government rural health programs are also reviewed.

The report is intended to aid the State directors, staff, and committees of rural health system agencies; the public health departments at all levels of government; the cooperative extension service professionals who have responsibility concerning the rural health system; policymakers and rural health program managers; and researchers, especially those located in land grant universities.

Selected indicators of the condition of the health care system are compared for metropolitan and nonmetropolitan areas. This condition can be evaluated by examining the inputs to the system and/or the outcomes from the system if a relationship can be shown to exist between the condition and these two types of indicators. For the health care system, the inputs are measures of supply of health resources and the outcomes are measures of the health status of the population. Although conflicting evidence exists, there is basis for assuming that both these types of indicators are

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1/ Economist, Economic Development Division, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. The section on government involvement in rural health care was begun while the author was a graduate assistant supported through Pennsylvania State University's Pennsylvania Title V Rural Development Program.

2/ Underscored numbers in parentheses refer to items in the bibliography at the end of this report.

related to the condition of the health care system (24). Therefore, both types of indicators will be compared for metropolitan and nonmetropolitan areas. 3/

FACTORS AFFECTING RURAL HEALTH NEEDS

Two types of shortages epitomize rural areas' needs for increased health resources. The first type, economic, is used by economists to specify the differences between the quantity of medical care demanded and the quantity supplied at the prevailing price. The quantity demanded is the amount individuals are willing and able to pay for medical care at the prevailing price. The second type, normative, exists when a good or service is considered a right by society. Normative shortage considers the need for services (as determined by the individual or health professional) beyond the point of that affordable to consumers. A normative shortage is a more serious consideration for policy planners because decisions regarding how much care is a right must be made, and once made, the form of market intervention to alleviate the shortage must be determined.

Several characteristics affect the shortage of health care services to rural area residents. At the county level, the data are collected only as frequently as the decennial census. 4/ Thus, the most recent census data available are for 1970 (table 1). Specifically, these show the prevalence of low incomes, hazardous occupations, higher proportions of senior citizens, and lower educational levels. Another characteristic of nonmetro areas, geographic isolation, means that residents must travel greater distances for routine and emergency health care. This is not to imply that all nonmetro people are subject to severe health deprivations. Rather, this suggests, and data on health status support, that a disproportionate number of nonmetro area residents are in need of health care in relation to metro residents. Consideration of these characteristics will help to determine the most appropriate method of alleviating shortages. Rural area residents are distinctive, owing to their geographic dispersity and lifestyles. Historically, planners have not been sensitive to the diversity and uniqueness of rural area situations and have applied blanket urban-oriented policies to all needy areas.

Income

The prevalence of economic poverty in a community has a dual effect on the unmet needs for health care. It increases the need for care, and it decreases the ability to purchase care. Poverty increases the incidence of disease through its relation to

3/ The terms rural and urban connote nonmetropolitan and metropolitan areas, respectively. However, a formal distinction is made between these two classifications of residence by the U.S. Bureau of the Census. In the rest of this report, rural and urban are used but a strict nonmetropolitan/metropolitan classification scheme is employed when data are compared by residence. Nonmetro and metro counties are further delineated into categories by size of the metro area of which each metro county is a part, and for nonmetro counties, by the number of urban residents and geographic proximity to a metro area (appendix A). This scheme of classification, theoretically, will unmask differences which may otherwise be obscured by simpler methods. The majority of the data are from the Department of Health, Education, and Welfare's (HEW) Area Resource File (56). The data for Alaska are not at the county level, so that State has not been included. Other sources are referenced accordingly.

4/ A mid-decade census beginning in 1985 has been approved and its scope is still being reviewed by the U.S. Bureau of the Census.

Table 1--Selected characteristics, by metro and nonmetro counties, 1970 1/

Socioeconomic characteristics	Total 2/	Metropolitan					Nonmetropolitan					
		Total	Greater				Urbanized		Less urbanized		Totally rural	
			Total	Core	Fringe	Medium	Lesser	Total	Adjacent	Non-adjacent	Adjacent	Non-adjacent	Adjacent	Non-adjacent
								Percent						
Income: (dollars)														
Under 3,000	100.0	58.0	29.7	23.5	6.2	19.4	8.9	42.0	7.4	4.8	10.7	11.8	2.4	4.8
3,000-5,999	100.0	62.3	31.7	24.6	7.1	21.1	9.5	37.7	7.9	4.8	9.3	10.1	1.9	3.7
6,000-9,999	100.0	69.4	36.8	26.6	10.2	23.4	9.2	30.6	7.8	4.2	7.5	7.6	1.3	2.3
10,000-14,999	100.0	78.0	45.5	30.8	14.7	24.1	8.4	22.0	6.6	3.2	5.3	4.9	0.7	1.3
15,000 and over	100.0	85.1	55.8	36.1	19.7	22.4	6.9	14.9	4.8	2.3	3.3	3.2	0.4	0.9
Occupation:														
White collar	100.0	80.2	49.1	34.1	15.0	23.0	8.1	19.8	5.7	3.2	4.4	4.7	0.6	1.2
Blue collar	100.0	71.0	39.1	27.5	11.6	23.5	8.4	29.0	7.6	3.6	7.5	7.0	1.3	2.0
Farmworkers	100.0	27.0	7.5	3.1	4.4	12.2	7.3	73.0	9.9	5.8	18.9	22.2	4.4	11.8
Service work	100.0	73.1	41.3	30.6	10.7	22.7	9.1	26.9	6.9	4.0	6.4	6.7	1.0	1.9
Not reported	100.0	78.3	48.1	36.7	11.4	22.6	7.6	21.7	5.9	3.0	5.2	5.1	0.9	1.5
Age:														
Under 10	100.0	72.9	41.1	27.9	13.2	23.1	8.7	27.1	6.9	3.8	6.6	6.6	1.1	2.1
10-21	100.0	72.0	39.8	27.3	12.5	23.2	9.1	28.0	7.2	4.1	6.6	6.8	1.1	2.1
22-39	100.0	75.2	43.4	30.4	13.0	23.1	8.7	24.8	6.6	3.8	5.9	5.8	1.0	1.8
40-64	100.0	73.1	42.7	30.1	12.5	22.3	8.1	26.9	6.6	3.5	6.6	6.8	1.2	2.2
65 and older	100.0	68.5	39.6	30.1	9.5	20.8	8.2	31.5	7.1	3.6	8.0	8.3	1.5	2.9
Education:														
Under 9	100.0	65.6	36.7	27.6	9.1	21.0	7.9	34.4	7.1	3.9	8.8	9.3	1.8	3.5
9-11	100.0	73.4	42.1	30.8	11.3	23.0	8.3	26.6	6.7	3.4	6.8	6.5	1.2	2.0
12	100.0	74.8	43.5	29.9	13.6	22.8	8.5	25.2	6.9	3.5	6.0	6.0	0.9	1.9
13-15	100.0	77.6	46.5	32.8	13.7	22.4	8.7	22.4	6.0	3.6	4.8	5.5	0.8	1.7
16 and more	100.0	81.2	50.6	33.6	17.0	22.4	8.2	18.8	5.8	3.2	3.9	4.2	0.6	1.2
Total population	100.0	72.6	41.5	29.1	12.4	22.6	8.5	27.4	6.9	3.7	6.6	6.8	1.2	2.2

1/ See appendix A for explanation of headnote items.
2/ Totals may not add due to rounding.

Source: (54).

poor nutrition, housing, and sanitation. As family incomes decrease, the average number of disability days per person per year tends to increase. The situation is exacerbated because poverty decreases an individual's ability to purchase needed care both directly and indirectly through insurance plans. Not only are lower income persons much less likely to have hospital insurance, but if they do, they are less likely than higher income persons to have more than one plan (68). The Medicaid program has helped finance the medical care costs to the poor. Nevertheless, medical care expenses are much more of a hardship for those in lower income groups (table 2). 5/

A disproportionately larger number of rural residents (and inner city residents) live in poverty. Given the existing system, therefore, poverty is a major obstacle to improved access of rural residents to adequate health care.

Table 2--Aggregate family outlay for personal health services as a percentage of annual family income, 1970

Annual family income and poverty level	Aggregate family outlay for health services	
	As reported in social survey	As reported in social survey and verified
Dollars	Percent	
Under 2,000	14.5	12.5
2,000-3,499	9.3	9.3
3,500-4,999	7.7	7.5
5,000-7,499	6.1	5.8
7,500-9,999	4.6	4.5
10,000-14,999	3.8	3.7
15,000 and over	3.3	3.1
Above near poverty	4.0	3.9
Below near poverty	8.9	8.3
Total	4.4	4.2

Source: (8).

Occupation

The types of employment a population is engaged in are related to the incidence of both acute and chronic health conditions and so to the health needs of a region. Several measures are used to indicate the relationship between occupation and employee safety. These include the fatality rate by industry, the injury and illness rate by industry, and the percentage of lost-workday injuries which result in days of restricted

5/ Two methods were used to measure expenses in the more recent nationwide survey on family outlay by income groups: one involving respondents' replies from a social survey and the other involving respondent and verification data.

work activity by industry. 6/ These measure only acute health conditions suffered by a worker. This selection is not to downplay the seriousness of chronic conditions (or of emotional conditions, for that matter) but was made simply because of the difficulty in measuring and identifying their relation to type of occupation. For example, the Secretary of Health, Education, and Welfare (HEW) recently estimated that approximately 21 to 38 percent of all cancer cases in the United States may be traced to sources in the workplace, but it may take years to document this (42).

Of the measures mentioned, the degree of physical danger to an employee ranks the industries differently. However, both the agriculture, forestry, and fishing industry and the mining industry are almost consistently ranked high by all three measures (table 3). These combined industries in 1976 constituted a larger share of

Table 3--Rankings and incidence rates of selected measures of job-related health conditions for hired workers, by industry, 1976

Industry division	Job-related fatalities		Illness and injury		Lost-workday injuries involving days of restricted work activity	
	Incidence rate per 1,000 full-time workers	Rank	Incidence rate per 100 full-time workers	Rank	Percentage	Rank
	Rate	Order	Rate	Order	Pct.	Order
Private sector	0.08		9.2		5.0	
Mining	.49	1	11.0	3	4.1	3
Agriculture, forestry, and fishing 1/	.28	2	11.0	3	1.9	5
Construction	.25	3	15.3	1	1.2	8
Transportation and public utilities	.19	4	9.8	4	7.7	2
Manufacturing	.06	5	13.2	2	8.0	1
Services	.05	6	5.3	6	1.5	6
Wholesale and retail trade	.04	7	7.5	5	1.3	7
Finance, insurance, and real estate	.01	8	2.0	7	2.8	4

1/ Only includes workers at places of at least 11 workers.

Source: (65).

6/ The Departments of Labor and HEW collect this type of data. HEW collects data on disability days for both self-employed and hired workers but does not differentiate between work-related and all disabilities. Labor collects work-related disability data for only hired workers, and in agriculture, only in workplaces of at least 11 workers. The latter data source was chosen because it more clearly represents the relationship between occupation and disability. The drawback to this data source for the purposes here is that it eliminates self-employed workers, which are the majority of agricultural workers.

the nonmetropolitan work force than the metropolitan work force, 10.6 percent and 2.0 percent, respectively. The agriculture, forestry, and fishing industry had the largest percentage increase in total injury incidence rate of any other industry between 1975 and 1976 and, although they did not have the largest percentage increase, both it and the mining industry had increases in the percentage of lost-workday injury rates.

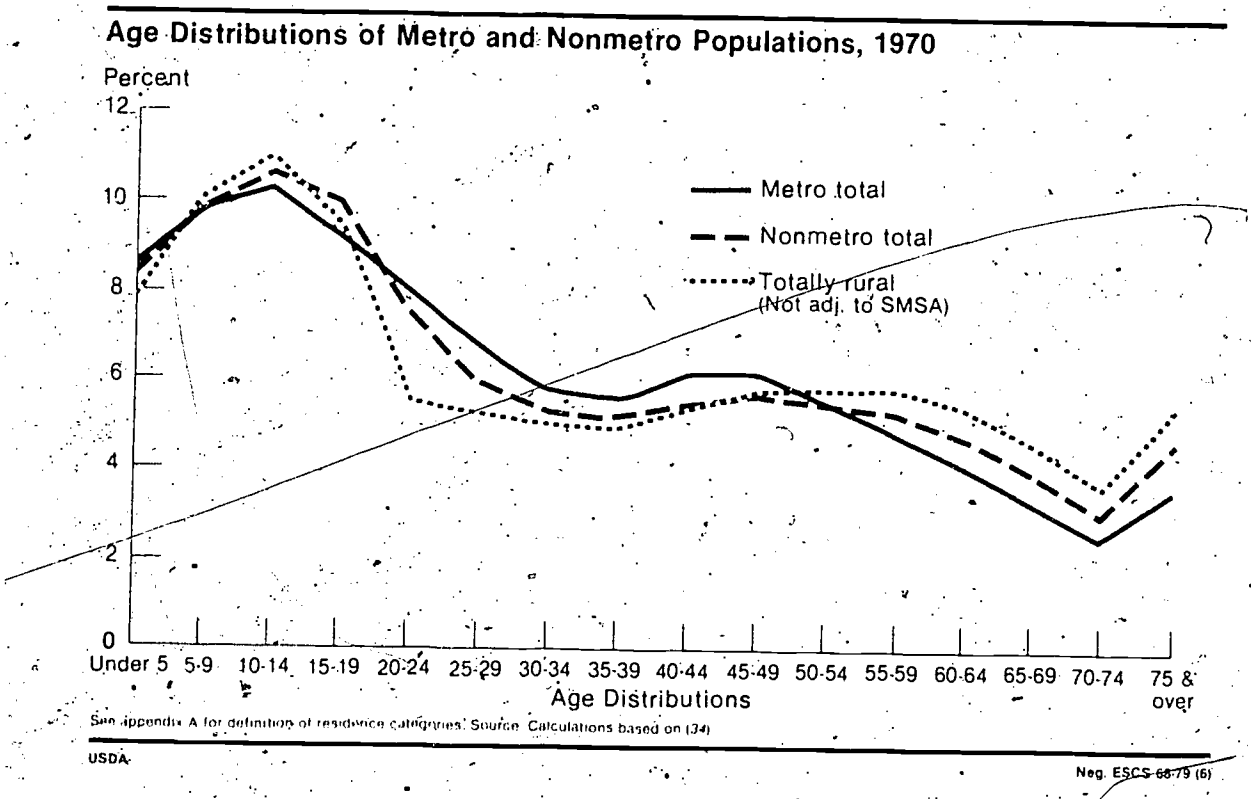
The existence and the extent of medical insurance coverage are not only related to an individual's income, but also to the type of occupation. Farmworkers, more than any other occupational group, are not likely to have medical insurance coverage.

Given the relation of the agriculture and mining industries to (1) the safety of an employee, and (2) the incidence of medical insurance coverage, it appears that residents of nonmetro areas experience a greater unmet need for medical care than do metro areas residents.

Age

Medical needs vary with age. Statistics substantiate that the elderly use more physician services, have more hospital admissions, and stay longer than do others in younger age groups. Three-fourths of the noninstitutional population aged 65 or older have one or more chronic conditions. Almost two out of five have a chronic condition that limits activity. Besides the elderly, young children less than 10 years old require the most health services, while those 10 to 45 years old require the least health care. Nonmetro areas have higher proportions of young children and elderly--precisely the two age groups that require and use the most health services (fig. 1).

Figure 1



Education

Studies consistently report that as the educational level increases so does use of health services (40). Persons with lower educational levels have not had the opportunity to learn proper disease prevention and health promotion habits or to become informed about such Government programs as Medicare and Medicaid. The suggestion that persons with lower educational levels use less health services because they do not need them is not true (fig. 2). As educational attainment increases, the likelihood of being unable to carry on a major activity, such as work, decreases.

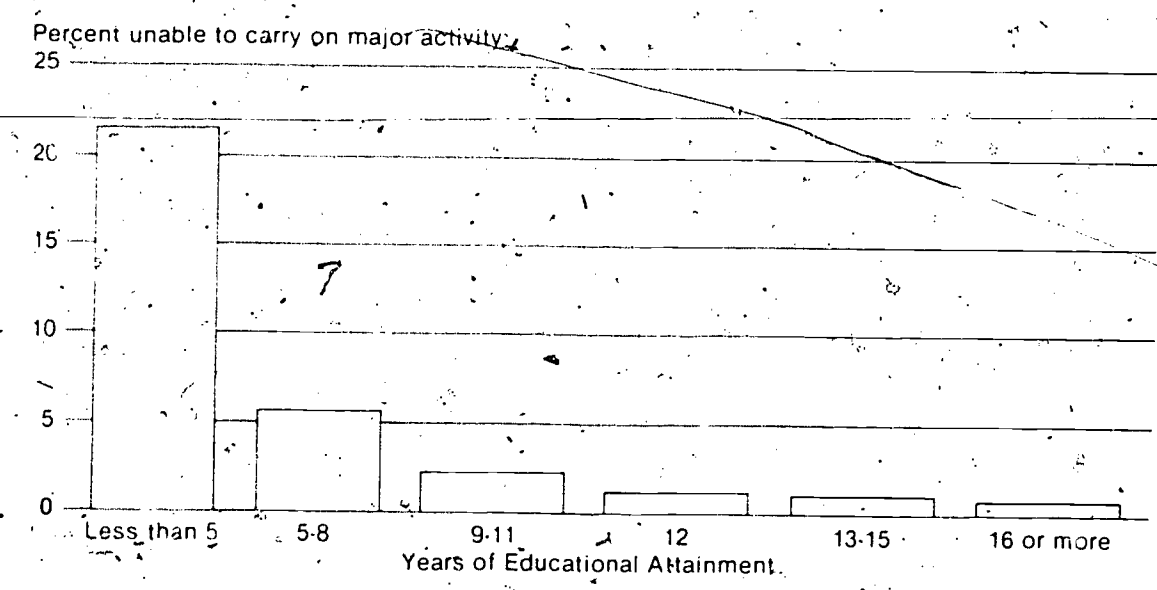
The level of education in nonmetro areas is generally lower than that of metro areas. The percentage of males 25 years and older who had completed less than 5 years of elementary school (defined as functional illiterates) in 1975 was almost twice as great in nonmetro as in metro areas. For females, that rate was about one-and-a-half times greater in nonmetro areas. The difference in educational attainment between nonmetro and metro areas is especially large when comparing functional illiteracy for the oldest age category (28).

GOVERNMENT INVOLVEMENT IN RURAL HEALTH CARE

About 9 percent of the total U.S. gross national product was spent on health care in 1977 (30). This sector has become one of the three largest industries, accounting for approximately 6 percent of the U.S. work force.

Figure 2

Percent Distribution of Persons with Chronic Disabilities by Education Attainment, 1974



Adjusted to the age distribution of persons 17 years and over in the civilian noninstitutionalized population of the United States
Chronic disability is defined as the inability to carry on a major activity
Major activity refers to ability to work, keep house, or engage in school or preschool activities
Source: Calculations based on (30).

USDA

Neg. ESCS 69-79 (6)

Government health care spending has increased both in an absolute sense and as a share of total health expenditures. Government's share (including Federal, State, and local) of national health expenditures represented 42.1 percent of the total or $310.13 per capita in 1977 (table 4).

Table 4--Real aggregate and per capita national health expenditures, by source of fund, and public as a percentage of total, selected years, 1940-77 1/

Year	Health expenditures					
	Total		Public		Public as a percentage of total	
	Aggregate	Per capita	Aggregate	Per capita	Federal	State and local
Year ending June 30:	Million dollars	Dollars	Million dollars	Dollars	--Percent--	
1940	21,335	159.23	4,297	32.09	3.9	11.4
1950	45,385	295.66	11,566	75.36	9.4	10.8
1960	66,127	362.22	16,355	89.59	9.2	12.4
1965	87,989	447.39	21,572	109.68	8.5	12.3
1970	116,112	559.70	42,604	205.36	22.3	11.9
Year ending September 30: 2/						
1975	153,327	706.47	65,404	301.36	28.7	13.7
1976	156,362	714.51	66,318	303.04	28.1	14.6
1977 3/	162,627	736.92	68,442	310.13	28.6	13.5

1/ Adjusted for inflation; 1977 = 100.
2/ Fiscal year was redefined.
3/ Preliminary.

Sources: (17, 30).

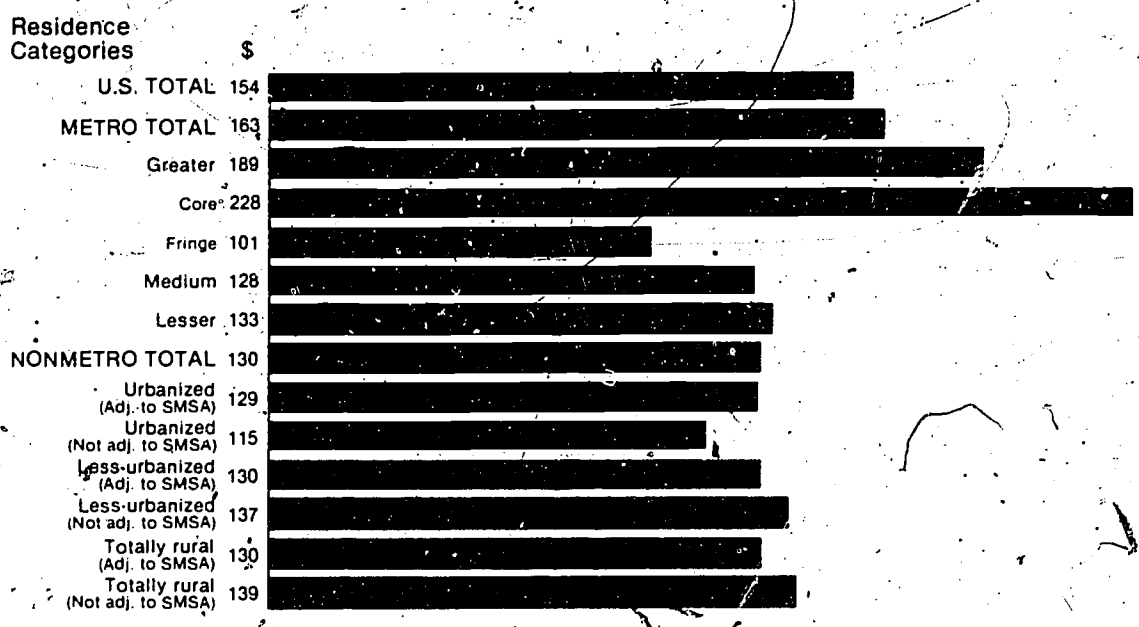
Health Expenditures

The only reliable information source on the distribution of public health expenditures by residence is for Federal expenditures. This is still of value since Federal health care expenditures in 1976 amounted to two-thirds of all public health expenditures, while the remaining one-third represented State and local governments' share. Overall, a lower per capita amount of Federal health expenditures in 1976 went to nonmetro areas than metro areas, $130 and $163, respectively (fig. 3). Also, exceptionally low outlays were made to areas such as fringe counties in greater metro areas and nonmetro counties that are urbanized but not adjacent to a Standard Metropolitan Statistical Area (SMSA). 7/

7/ See appendix A for SMSA definition.

Figure 3

Per Capita Federal Outlays for Health Payments and Services, by Residence, 1976



Includes approximately 80 percent of Federal health expenditures. The other 20 percent were funds omitted because they were research grants or funds for programs where the county distribution was unknown or where the procedure used to estimate the distribution was questionable. See appendix A for definition of residence categories. Source: Calculations based on (47)

USDA Neg. ESCS 70-79 (6)

The public health financing programs administered by the Health Care Financing Administration--Medicare and Medicaid--represent the major portion of Federal health care expenditures. The 1976 distribution estimate of these programs' funds by residence, when compared to the distribution of the population, showed that nonmetro areas received fewer funds per capita than metro areas. 8/ (Some would contend that health care costs more in metro areas than nonmetro areas, but no evidence supports that contention where the quality of care is assessed as equal.) Such a distribution could be considered inequitable since both the aged and the economically impoverished populations are overrepresented in nonmetro areas (21, 26).

Medicare, a Federal program with uniform benefits, has two major parts: Part A covers hospital and institutional care and Part B covers outpatient services. Physicians in the Medicare program are reimbursed the prevailing fees which are about

8/ Medicare's distribution of funds by county is estimated from a formula based on the known distribution of recipient population at a point in time. Medicaid's distribution is estimated from a formula based on the known distribution of the Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI) recipient population at a point in time. This has the effect of assuming every recipient receives equal funding, which is unlikely. It may overstate outlays to nonmetro areas in a county because of the relative unavailability of specialized, and thus expensive, medical personnel and equipment in nonmetro areas. Because the distribution of Medicaid funds is estimated from the AFDC and SSI population, no consideration is given to the possible case where services are nonexistent even if an individual is eligible (a more likely occurrence in nonmetro areas).

25 percent lower in nonmetro areas than in metro areas. Lower fees are in part due to the relative absence of specialized care available to nonmetro residents. Medicare also has limited home health and nursing home benefits (22, 59). Because the aged represent a higher proportion of the nonmetro population and a higher proportion of the aged in nonmetro areas have chronic conditions than their metro counterparts do, inadequate provision of home health and nursing home services is particularly detrimental to the residents of nonmetro areas (39). The high poverty rates among the nonmetro aged make the deductible and coinsurance provisions of Medicare more onerous (22).

The Medicaid program is a Federal-State cooperative program, and the Federal share of the program varies by State. About 60 percent of the nonmetro poor resides in the South, where Medicaid recipients receive the lowest amount of Medicaid funding per capita (26, 35, 57). A major factor contributing to the pro-urban bias of the Medicaid program is that eligibility is tied to cash welfare programs such as Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI) (21, 57). The rural poor are more likely to live in two-parent households (57 percent) than the urban poor (38 percent), and generally only one-parent families have been eligible for AFDC. (As of June 1978, 28 States provided benefits to two-parent poor families when the father was unemployed (63).)

Selected Government Programs

Recently, the Federal Government has recognized the rural health care situation as unique and designed special programs to ameliorate rural health care problems. Eight programs particularly benefit rural areas: Community Health Centers (CHC); Migrant Health Centers (MHC); National Health Service Corps (NHSC); Health Underserved Rural Areas (HURA); Rural Health Initiative (RHI); Rural Health Clinic Services Act; Loan Repayment; and Community Facilities Loan Programs (table 5 and appendix B).

The Government uses several indicators to determine underserved areas (appendix C). Being designated as an underserved area is a necessary, but not a sufficient, requirement for funding. Nonmetro areas have been found to be overrepresented when scarcity is determined by the two most widely used methods in designating shortage areas, the method to identify Medically Underserved Areas (MUA) and the method to identify Health Manpower Shortage Areas (HMSA). For example, in 1977, approximately 27 percent of the population resided in nonmetro areas as defined by the census, but over 55 percent of all persons in MUAs and 51 percent of all persons in HMSAs resided in nonmetro areas.

Community Health Centers

The goal of the Community Health Center (CHC) program is to support ambulatory health care projects in areas with scarce or nonexistent health services. Grants are provided to public or nonprofit health organizations designated as MUAs (appendix C). However, out of the total MUA population in either rural or urban areas in 1978, only 6.2 percent were served by the CHC program (66). Grants are available for planning and development and operation of clinics. Regulations include provision of specified health services.

The CHC program, in its present form, was established under the Health Revenue Sharing and Health Services Act of 1975 (P.L. 94-63). The act combined three programs--the Neighborhood Health Centers (NHC), Family Health Centers (FHC), and the Community Health Networks (CHN)--under a single administration termed CHC. Funding of the NHC, the major program of CHCs predecessors, was first authorized in 1965 in Section 211-2 of the Economic Opportunity Act and administered by the Office of

Table 5--Information on Federal programs involved in delivery of rural health care

Program	Legislative authority	Budget appropriation FY 1979	Proposed percentage of dollars in rural areas	Primary eligibility criteria 1/2/	Program administrators 2/
		Million dollars	Percent		
Community Health Centers	P.L. 94-63	3/ 252.0	for new users, 40-60 percent of users	MUA	BCHS, HSA, HEW
Migrant Health Centers	P.L. 95-626	3/ 34.5	100	HIA	BCHS, HSA, HEW
National Health Services Corps	P.L. 91-623	3/ 57.0	85	HMSA	BCHS, HSA, HEW
Health Underserved Rural Areas	Sec. 1110, Title XIX of the Social Security Act	16.5	100	rural, scarcity area, research opportunity, size of Medicaid population	BCHS, HSA, HEW
Rural Health Initiative	4/	4/	100	rural, MUA, HMSA HIA, HIM	BCHS, HSA, HEW
Rural Health Clinic Services Act	P.L. 95-210	extend Medicare and Medicaid reimbursement	100	rural, MUA HMSA	HCFA, HEW
Loan Repayment Program	Sec. 741-f. PHS Act 5/	5/ 1.5	unknown	HMSA	BHM, HRA, HEW
Community Facilities Loan	P.L. 92-419	250.0	100	County population less than 10,000 persons, Meet financial stability standards	FmHA, USDA

1/ See appendix C. 2/ See text for unabbreviated name. 3/ Funded under continuing resolution. 4/ An administrative effort, no funds are appropriated. 5/ Does not include the nursing profession which is authorized under Sec. 836(h) of the Public Health Service Act.

Economic Opportunity (OEO). HEW also sponsored NHCs which were authorized under Section 314(e) of the Comprehensive Health Planning and Public Health Services Act of 1966. All of the OEO centers were gradually transferred to HEW between 1970 and 1973.

The early NHCs were large, comprehensive health projects with little emphasis on financial self-sufficiency. New projects are much more limited, although 158 of the earlier projects are still in operation. Earlier established projects, because of their comprehensiveness, receive the majority of CHC funds. About 80 percent of CHC money in fiscal year 1978 went to these earlier-type CHC projects. Only about one-fifth of the comprehensive projects' users lived in rural areas in 1978, even though over 55 percent of the MUA population resided in rural areas. Over $7.50 in CHC funds were spent in 1978 per urban medically underserved resident, compared to about $1.00 per rural medically underserved resident (49, 66).

The Congress, because of its expressed awareness of the poor health care situation found in rural areas, has attempted to make the CHC program somewhat more sensitive to the needs of rural areas. As of fiscal year 1979, it is required that the percentage of users served by new projects or expanded old projects, in either rural or urban areas, be between 40 to 60 of the total new users. This is to insure that both needy rural and urban areas are reached. This adjustment should not obscure the fact that the earlier, more costly projects are disproportionately serving urban residents and this 40:60 ratio applies only to new users, rather than all users or all funds (46). The program is operating under a continuing resolution of $252 million in fiscal year 1979.

Migrant Health Centers

The Migrant Health Act, first passed in 1962 (P.L. 87-692) and amended several times, was completely rewritten in Title IV of P.L. 94-63, the Health Revenue Sharing and Health Services Act of 1975. That act, amending the authority to clearly define the operation of a migrant health center, required the Secretary of Health, Education, and Welfare to establish a National Advisory Council on Migrant Health and to initiate a study of migrant housing. The law also provided for grants to be made to public and nonprofit entities to plan, develop, and operate migrant health centers. (The most recent amendments to P.L 94-63 were made in P.L. 95-626.)

The Migrant Health Centers program's purpose is to support the delivery of quality health care services in rural areas for migrants and seasonal farmworkers and their families. An existing or a proposed center to be eligible for funding must be located in a High Impact Area (appendix C). Centers will provide diagnostic services, treatment, and preventive services. Other services may also be provided, including dental care, nutrition counseling, and environmental services (66). The amount appropriated in fiscal year 1978 was $34.5 million. The number of persons receiving services through this program had increased to 557,000 by 1978.

National Health Service Corps

The purpose of the National Health Service Corps (NHSC), established under the Emergency Health Personnel Act of 1970 (P.L. 91-623), is to improve the delivery of health services in HMSAs and reduce the number of such areas by the appropriate placement of health professionals and health resources. The Federal Government pays the salaries of the health personnel and provides administrative and financial management assistance. The community manages the practice and provides office space, equipment, supplies, and support staff. Placing personnel in HMSAs may mean that some corps personnel will remain in these areas after their 2-year obligation has ended. The current retention rate is about 47 percent for personnel who extend their obligation in the corps or remain in these communities in private practice (61).

A public or nonprofit private health organization to be eligible for NHSC personnel must be located in an HMSA (appendix C). Other factors which affect whether a health organization will be approved are the comments from the local professional societies, the degree of community support, and priority given to an organization employing midlevel health practitioners. An intensive recruitment and matching process is initiated to place appropriate personnel in an area after approval.

There are two separate fundings for this program: one provides health professionals, management, and technical assistance to a community; the other provides scholarships to students who are committed to serve in the corps upon completion of their training (or they may repay the scholarship). The program was funded at $41 million in fiscal year 1978 to meet the first obligation. Student scholarship funds available in 1979 are budgeted at $65 million. NHSC personnel without scholarship obligations receive substantially higher salaries. A total of 1,289 personnel were placed at 668 sites across the Nation during fiscal year 1978. This included 694 physicians, 210 dentists, and 385 other health personnel such as nutritionists and medical social workers. 9/ Throughout 1978, 89 percent of these personnel were located in rural areas and the remaining 11 percent in urban areas. The administrators plan to alter the rural-urban ratio of personnel to 85:15 by the end of fiscal year 1979 (44). An estimated 3,500 professionals will be in the field by 1981, on the basis of the number of present NHSC scholarship students.

Health Underserved Rural Areas

Health Underserved Rural Areas (HURA), established in 1974 under the research and demonstration authority of Section 1110 and funded under Title XIX of the Social Security Act, was initially administered by the Medical Services Administration of the Social and Rehabilitation Services. However, on January 15, 1976, the HURA program was transferred to the Bureau of Community Health Services, Health Services Administration, of the Public Health Service in the interest of uniting the major health programs. The Primary Care Research and Demonstration Program, authorized in 1978 under Section 340 of the Public Health Service Act, revised and expanded the authority of HURA. The Primary Care Research and Demonstration Program was not included in the fiscal year 1979 appropriations bill, however. The ongoing HURA projects are to be funded at $16.5 million for fiscal year 1979. This apropriation, approved under the authority of Section 1110, SSA, will allow for approximately eight new projects in 1979.

Funds under this program, available to public and private entities, must be used for demonstration of, or research on, primary health or dental services. Acceptable projects include research or demonstration on the provision of services and attraction of health personnel to a scarcity area or on unique and promising delivery systems. Funds, were authorized for urban areas for the first time under the Primary Care Research and Demonstration Program. To this date, appropriations have not been made for this program.

Rural Health Initiative

The Rural Health Initiative (RHI) is an administrative effort (rather than a legislative authority) of the Bureau of Community Health Services in HEW to assist in the development of health care systems in rural areas by managing the activities of a number of existing Federal programs operating in rural areas. The programs coordinated and integrated under the RHI include the following: The Community Health Centers

9/ Unpublished data from the National Health Service Corps, Department of Health, Education, and Welfare.

Program, the National Health Service Corps, the Health Underserved Rural Areas, the Migrant Health Program, and the Appalachian Health Program. 10/ Appplicants are expected to coordinate their activities with other area health programs.

These programs, until the initiation of the RHI in 1975, operated independently of other Government programs, which meant that two or more programs could have been serving the same community with separate facilities. The RHI has attempted to convert such narrow categorical projects in rural areas into broad-based primary health care projects.

An applicant must be a public or nonprofit private entity interested in providing health care services to a rural area with demonstrated need to apply for funding. Needy areas include those designated as (1) Medically Underserved Areas (MUA), (2) Health Manpower Shortage Areas (HMSA), (3) High Impact Areas (HIA), or (4) High Infant Mortality (HIM) rate areas (appendix C). Areas considered underserved by the greatest number of these four criteria have the highest priority for support. Areas applying for planning and develoment grants must meet three out of the four criteria to be eligible for funds under the RHI.

Rural Health Clinic Services Act

Because of the sparsity of physicians in rural medically underserved areas, services which would otherwise be provided by a physician are frequently provided by so-called new or midlevel health care practitioners, such as physician assistants and nurse practitioners. Until recently, services provided to Medicare (part B) and Medicaid patients by midlevel health practitioners were not reimbursable if a physician were not present. The recent Rural Health Clinic Services Law of 1977 (P.L. 95-210) amends the Social Security Act to extend coverage to these services provided in a rural clinic meeting the eligibility requirements.

Medicare and Medicaid requirements for reimbursement also state that a clinic must be a licensed facility which meets minimum safety standards and be located in a rural area that has been designated as a HMSA or a MUA. Exemptions from the latter requirement can be made by the Secretary of Health, Education, and Welfare.

The act also established requirements for staffing and responsibilities of staff members. Among these are the requirement that the professional staff include at least one physician and at least one midlevel health practitioner, one or more of whom must be available to furnish services at all times the clinic operates. The practitioners, in addition, must be available to furnish care at least 60 percent of the time the clinic operates, and the physician's responsibility includes direction and supervision of the clinic and staff. Other regulations relate to the types of services provided, maintenance of the patients' health records, and evaluation of the program.

Application for certification is made to the State health department. If a clinic is certified for reimbursement under Medicare, it is automatically certified under Medicaid. As of March 1979, about 300 clinics have been certified since the program was started (March 1, 1978, for Medicare and July 1, 1978, for Medicaid) (41). Initially, five intermediaries under contract to HEW will set the reimbursement levels which will depend on costs and utilization rates. This level, reviewed during and at the end of the fiscal year, will be adjusted to equal the actual costs to the clinic. The maximum level has been established at $27.30 per visit and the lower threshold at $16 (64). The level will be set annually after March 1980 and not be adjusted during that fiscal year.

10/ The special problems of needy subpopulations, such as migrants and Appalachians, are discussed in the final section.

To encourage cost effectiveness, a clinic will be required to meet two screening regulations. One screen requires overhead costs to be under 30 percent of total costs. Another screen sets the productivity requirements for the number of patients to be seen during working hours by the physician and by the practitioner. This act when fully operational--assuming that certification requirements are not too restrictive--will be a positive force in counteracting the effects of the physician maldistribution problem in rural areas.

Loan Repayment Program

The Comprehensive Health Manpower Training Act of 1971 broadened a previously established loan repayment program for health professionals. Funds are made available to partially repay Federal student loans used to finance medical education for health professionals practicing in HMSAs. The Federal Government repays 60 percent of educational loans when registered nurses, and doctors of medicine, dentistry, optometry, pharmacy, podiatry, osteopathy, and veterinary medicine sign a contract to practice in an HMSA for 2 consecutive years. An additional 25 percent of the outstanding balance is repayed if eligible personnel agree to practice in an HMSA an additional year.

Personnel may not meet loan repayment obligations concurrently with NHSC scholarship obligations. The program does not deal directly with a health organization (as does the NHSC) in placing personnel in an HMSA so a community does not actually apply for personnel. After confirmation that eligible personnel are practicing in a HMSA, personnel may apply for the loan repayment program. Personnel are eligible only if involved with direct patient care. At this time, appropriations are almost exhausted for 1979 and the program's administrators do not expect funds to be authorized for 1980.

Community Facility Loans

The Farmers Home Administration (FmHA) sponsors an Essential Community Facility Loans Program for rural areas and towns of up to 10,000 population which meet specified criteria. The objective of the program authorized in the Consolidated Farm and Rural Development Act, Section 306(a), as amended by the Rural Development Act of 1972, is to help rural areas obtain stable economic growth and development. Loans are provided for construction or improvement of essential community facilities to public entities (such as municipalities, counties, and special purpose districts) as well as for nonprofit corporations if they are unable to obtain needed funds from other sources at reasonable rates and terms and if adequate plans for repayment are made. The interest rate currently is 5 percent on the unpaid principal and the maximum term on all loans is 40 years. Loans are only available to towns of less than 10,000 population or in the open countryside. Funds are allocated to States based on a formula which considers the percentage of the rural population living in poverty.

Essential community facilities include: water or sewer systems, fire stations, hospitals, clinics, nursing homes, libraries, community buildings, industrial parks, or other facilities which are judged to provide essential services to rural people. Health care facilities funded under this program include clinics, nursing homes, and hospitals. Of the $250 million appropriated in fiscal year 1978, 68 percent was allocated for health care facilities; however health facilities comprised only 35 percent of the number funded. 11/ The fiscal year 1979 budget is $250 million with health care allocations expected to remain the same.

11/ Unpublished data from the Community Facilities Loans Division, Department of Agriculture.

FmHA and the Health Services Administration (HSA) of HEW recently signed an agreement regarding funding of rural health care projects. FmHA will annually set aside a portion of the Community Facility Loan Program funds for Community and Migrant Health Center Program grantees who apply and are eligible for Community Facility loans. The first annual allocation will be $25 million. The agreement will cover fiscal year 1979 through the end of fiscal year 1983. It is estimated that 300 clinics, serving 1.35 million people will be jointly funded by HEW and USDA within that time period (45).

Health Maintenance Organization Program

The Health Maintenance Organization Program (HMO) is another Federal program designed to meet health care needs in medically underserved areas. The program is a legal entity that accepts, in exchange for a fixed advanced annual payment, contractual responsibility to assure the delivery of a stated range of health services to a voluntarily enrolled population. HMOs are organized by physicians, employers, labor unions, hospitals, medical schools, consumer groups, and corporations. Two important effects of HMOs are: (1) integration of many types of health care to promote cooperation among providers and (2) incentives to help health care providers keep costs down.

The Health Maintenance Act of 1973 (P.L. 93-222) provides for grants, loans, and loan guarantees for feasibility, planning, and initial HMO development. HMOs in MUAs that apply for funding are given priority treatment and at least 20 percent of the funds are earmarked for nonmetropolitan areas. However, less than that goes to nonmetropolitan areas because there are few rural applicants that qualify. One HMO model, the Independent Physician's Association where a single physician provides care through a prepaid health plan, may be helpful in rural areas. A few are presently funded through the Federal HMO Program. Assessing their feasibility for all rural areas at this stage is premature.

The Federal Government is involved in programs designed to increase the health care services to specific underserved populations, such as migrants, American Indians, and Appalachians who are likely to live in nonmetro areas. HEW administers the Appalachian Health, Indian Health, and Migrant Health Programs.

The Appalachian Regional Commission (ARC), a partnership of governments in the 13 Appalachian States, was initiated in 1965 to deal with the region's developmental problems, including primary health care to that subpopulation. Eight other regional commissions are operating in the United States. Five have health programs, but not on such a large scale as ARC (see appendix B).

SUPPLY OF MEDICAL RESOURCES

An area's medical resources indicate the adequacy of the area's medical system. Before we can compare the distribution of resources among county groups and describe the factors which affect such a distribution, we must recognize the limitations in such comparisons. Resources are compared to expose the unequal access to care for subpopulations. This does not imply that an average supply of resources or the greatest supply of resources in an area are necessarily the correct amounts for which to aim, even if population needs and resource productivity are constant.

Needs vary by area and needs of nonmetro residents are increased by the prevalence of low incomes, hazardous occupations, higher proportions of senior citizens, and lower educational levels. Productivity and quality of medical resources are also not constant across the United States. For example, nonmetro areas have a higher

proportion of physicians over age 65 compared to metro areas. This fact may translate into lower productivity and/or lower quality of care (2, 27, 52). However, nonmetro physicians see more patients per week than metro physicians. A standard of national health resources should (1) include an estimate of an adequate supply of medical resources in the view of both provider and consumer, and (2) allow for adjustments due to variance in needs and quality of care.

Personnel

The comparison technique, because of the lack of a widely accepted health resources standard, is the most useful tool available for evaluating the nonmetro health care system. The distribution of physicians, dentists, osteopathic physicians, registered nurses, and licensed practical nurses per 100,000 population ratio is a more common and valid measure of availability than simple counts of personnel since it adjusts for the area's population size (table 6).

Table 6--Selected medical personnel per 100,000 population by residence

Residence 1/	Medical personnel				
	Non-Federal physician, patient care 1975	Osteopathic physicians, general practice, 1975 2/	Licensed dentists 1974 3/	Active registered nurses, 1972	Employed licensed practical nurses, 1974
	Number per 100,000 population				
Metropolitan	157	4.7	57	380	190
Greater	178	5.0	63	378	169
Core	204	5.0	64	401	186
Fringe	119	5.1	61	324	131
Medium	134	5.0	49	385	208
Lesser	125	2.5	48	378	242
Nonmetropolitan	71	3.5	35	270	198
Urbanized					
Adjacent	87	3.6	36	349	179
Nonadjacent	107	2.7	47	355	260
Less urbanized:					
Adjacent	58	3.1	30	214	197
Nonadjacent	65	4.1	36	251	220
Totally rural					
Adjacent	35	2.9	21	130	111
Nonadjacent	38	3.7	28	173	129
U.S. total	134	4.4	51	351	192

1/ See appendix A for definition of stub items.
2/ Data on osteopaths in Pennsylvania are for 1976.
3/ Does not include Pennsylvania.

Sources: (5, 6, 56).

The number and distribution of physicians are of great importance. The United States will have an oversupply of physicians in the next decade, according to the Secretary of Health, Education, and Welfare (13). The number of active physicians increased 46 percent between 1960 and 1975. However, two statements must be made regarding a surplus of physicians. First, this predicted surplus of physicians is an economic surplus, given an estimated cost of physician services. No attempt has been made to estimate the normative shortage or surplus of physicians. Second, this "wealth" of physicians has not been shared equally. There were 71 non-Federal physicians in patient care per 100,000 population in nonmetro areas, compared with 157 in metro areas in 1975. The physician-to-population ratio furthermore was the lowest in totally rural areas.

Physicians also vary among county groups by the types of practice in which they are engaged. The American Medical Association (AMA) identifies doctors in patient care as general practitioners (GP), medical specialists, surgical specialists, other specialists, or as hospital-based physicians. GPs, those physicians involved in the delivery of primary health care, generally have less income than other types of physicians. The average net income for physicians in 1976 was $59,544, but for GPs it was $47,438 (15). The distribution of specialists, who must have more training and specialized skill, can be used as a proxy for the quality of care available to an area. Relatively few specialists are located in nonmetro areas, in contrast to GPs (table 7).

Table 7--Physicians in patient care per 100,000 population by type of practice and residence, 1975

Residence 1/	Office-based				Hospital-based
	General practitioners	Medical specialists	Surgical specialists	Other specialists	
	Number per 100,000 population				
Metropolitan	19.9	30.9	36.3	25.6	44.7
Greater	20.4	35.5	37.7	29.0	55.1
Core	21.7	39.3	41.9	32.2	68.9
Fringe	17.4	27.0	28.4	21.8	24.4
Medium	19.5	25.4	34.3	21.3	33.6
Lesser	18.7	24.1	34.7	21.6	26.2
Nonmetropolitan	25.9	10.5	18.3	9.2	7.4
Urbanized					
Adjacent	22.9	15.5	25.7	13.0	10.3
Nonadjacent	21.6	19.7	33.9	17.7	14.2
Less urbanized:					
Adjacent	27.7	6.6	11.6	5.6	6.1
Nonadjacent	29.9	7.7	15.2	7.4	4.5
Totally rural					
Adjacent	25.3	1.7	3.5	1.8	2.5
Nonadjacent	26.1	2.9	4.5	2.7	1.8
U.S. total	21.5	25.3	31.4	21.2	34.6

1/ See appendix-A for definition of stub items.

Source: (5).

Osteopathic doctors represent another source of health care. The percentage of residents having an osteopath as their regular source of care remained at 3 percent from 1963 to 1970 for rural nonfarm residents and jumped from 3 to 7 percent for rural farm residents in that same time period (8). The number of osteopaths per 100,000 population in metro areas was 4.7 and in nonmetro areas was 3.4 in 1975. Osteopathic physicians are more evenly distributed across the Nation than other physicians, although they are a relatively small group.

The ratios of dentists and registered nurses (RNs) per population were greater in metro areas than nonmetro areas. There were 57 dentists per 100,000 population in metro areas in 1974, compared to 35 in nonmetro areas despite the greater dental problems of nonmetro residents due to the prevalence of nonfluoridated water. There were 380 RNs per 100,000 population in metro areas, compared to 270 in nonmetro areas. Totally rural residents had the least availability of both these types of health personnel (table 6).

For licensed practical nurses the situation is slightly different. Nonmetro areas had approximately the same number of LPNs per 100,000 population as metro areas in 1972. However, totally rural residents faced the lowest availability of this type of health personnel of any area in the Nation (table 6).

Medical personnel tend to be concentrated in metro areas for several reasons, including the perceived need to be close to medical facilities and supportive and consultative cohorts. Other factors affecting the preference of physicians and other personnel to locate in metro areas are: higher incomes, quality of life (such as social and educational amenities and greater educational opportunities for family members), contacts valuable to careers, and less demanding workloads (27, 52).

The maldistribution of physicians appears to be almost totally unaffected by market forces because the medical care industry is noncompetitive (10, 43, 52). If the principles of economics were operating, as supply of physicians increases and nothing else changes, the price would decrease. This did not occur for physicians (25). This situation is fostered by barriers to resource mobility, such as limited medical school enrollment and restricted medical licensure; consumer uncertainty surrounding technical medical issues; the consumer's frequently critical physical condition when seeking medical care; and the politically powerful health care lobbyists (10, 55).

The fact that decisions by individual physicians account for 70 percent of all health care expenditures illustrates physicians' control of both the supply and demand of their services (13).

Intervention by the Federal Government in the location decision, especially through the National Health Service Corps, has partially corrected the maldistribution problem by providing incentives to both medical colleges and students. Several studies suggest that physicians residing in nonmetro areas prior to training are more likely to practice in nonmetro areas than those residing in metro areas (12, 33). A partial solution to the maldistribution problem would be recruitment of medical students from nonmetro areas.

Facilities

The distribution of facilities and equipment also varies (table 8). There were 495 U.S. counties without a community hospital (defined as a non-Federal, short-term general hospital which is open to the public) in 1976. There are more community hospitals per capita in nonmetro areas than metro areas but these hospitals are generally smaller. Thus, there are actually more hospital beds per person in

Table 8--Selected medical facilities per 100,000 population by area

Residence 1/	Short-term community hospitals, 1975		Nursing homes, 1973	
	Facilities	Beds	Facilities	Beds
	Number per 100,000 population			
Metropolitan	2	460	5	479
Greater	2	459	5	499
Core	2	519	5	564
Fringe	2	329	4	380
Medium	2	447	5	424
Lesser	2	502	7	542
Nonmetropolitan	5	428	6	407
Urbanized				
Adjacent	3	379	5	365
Nonadjacent	4	582	7	554
Less urbanized				
Adjacent	5	393	6	386
Nonadjacent	7	487	8	500
Totally rural				
Adjacent	6	268	4	228
Nonadjacent	9	333	6	310
U.S. total	3	451	5	454

1/ See appendix A for definition of stub items.

Source: (56).

metro areas than nonmetro areas. Nonmetro hospitals are also generally older, less likely to be accredited, and lacking in specialized services. The American Hospital Association reports that the assets per bed for metro hospitals are $39,998, compared to $26,804 for nonmetro hospitals (3).

Many hospitals in nonmetro areas were constructed under the federally funded Hill-Burton Program initiated in 1946. Hospitals funded by this program were obligated to make services available to all community residents and provide a reasonable amount of free or low-cost care to indigent patients. These obligations were not enforced. However, a new effort to monitor and enforce the compliance of these requirements was recently formulated by HEW. If it is successful, the indigent metro and nonmetro population will be more likely to receive hospital care (20).

Nonmetro areas need specialized facilities, such as nursing homes and home-health care facilities, because of the relatively large aged population. However, in 975, there were 479 nursing home beds per 100,000 population in metro areas, compared to 407 in nonmetro areas. Projections are that, by the year 2000, while the 1974

total population will have increased 22.9 percent, the aged population will have increased 36.6 percent (59).

Mental health care is another important service scarce in rural areas. A recent study found that the rural-urban status of an area, rather than the medically established need of care, determined the nature and number of services available (53). Thus, rural areas, in terms of mental health resources, are the most underserved. Nonmetropolitan poverty areas have the lowest mean number of mental health personnel hours per population of any rural-urban status combination.

Access to Health Care

Utilization of services is an indicator commonly used to measure access to health care. Metro area residents had relatively more physician visits (5.3) per person per year than nonmetro area residents (4.4) in 1975 (table 9). The percentage of the population having at least one physician visit during the 12 months prior to being interviewed shows that 75.9 percent of the metro population had one or more visits, compared to 73.0 percent of the nonmetro population. Only 35 percent of these nonmetro visits were to specialists, compared to 65 percent for metro residents; and the average visit lasted only 12.8 minutes in nonmetro areas, compared to 15.8 in metro areas (36).

Table 9--Visits to physicians and dentists by residence, 1975

Residence 1/	Visits per person per year		Percentage of population with one or more visits in past year	
	Physician	Dentist	Physician	Dentist
	--------Number-----		-------Percent------	
Metropolitan	5.3	1.8	75.9	52.5
Greater	5.4	1.9	76.2	54.3
Core	5.4	1.9	75.8	52.2
Fringe	5.4	1.9	77.2	58.8
Medium	5.2	1.7	76.0	51.0
Lesser	4.8	1.6	74.6	48.8
Nonmetropolitan	4.4	1.2	73.0	44.2
SMSA				
Adjacent	4.6	1.3	73.4	44.8
Nonadjacent	4.2	1.2	72.5	43.4
U.S. total	5.1	1.6	75.2	50.3

1/ See appendix A for definition of stub items.

Source: (59).

Dental care, a major component of primary care, is often viewed as elective, and relatively large differences exist among income groups in its utilization. A higher prevalence of lower income persons, along with less availability of dental services, may explain the lower utilization of such services in nonmetro areas. Dental visits per person per year were higher for persons living in metro areas (1.8) than for persons living outside metro areas (1.2).

The population living in fringe counties of metro areas had the highest proportion of persons who had seen a dentist within 1 year (58.8). The lowest proportion was for persons residing outside of and not adjacent to metro areas (43.4).

The opposite relationship between utilization of physician services and residence exists for utilization of hospital services and residence. For example, in 1975, the percentage of the population with one or more periods of hospitalization was 10.3 for metro areas and 11.6 for nonmetro areas. Differences by place of residence are not large, but they are consistent for every age group (59). Again, this may be related to the greater prevalence of low incomes in nonmetro areas. Hospitalization is known to be inversely related to income for several reasons, including less access to preventive and primary health care (59). Another determining factor may be the greater distance nonmetro people must travel to obtain care. Thus, a patient may be hospitalized to avoid repeated long trips and to assure prompt attention if needed.

Hospital care may be just as accessible to nonmetro residents as to metro residents in terms of beds per capita, but in nonmetro areas, this care is usually provided at smaller hospitals with less technology and specialized services. Highly specialized services generally require a large service population to support equipment investments and to attract trained personnel. Since nonmetro areas are sparsely populated, emergency medical services are vital to increased access to specialized services for nonmetro residents.

Other measures of access to health care include whether an individual has a regular source of care, appointment waiting time, travel time to care, ability to obtain a walk-in visit, and office waiting time. A 1975 nationwide survey found that rural farm residents had the least access when it was measured by the last three of these five measures (1).

HEALTH STATUS MEASURES

The health care system's goal is to reduce disease and promote health. Therefore, the performance of the system, the evaluation of health care policies, and the resulting quality of health care should be appraised by its effects on health status. This can be a controversial and difficult task. One primary reason is the lack of a generally accepted health status definition. A definition can be limited to a strictly diagnostic classification or can encompass such factors as psychological well-being; changes in knowledge, behavior, or attitudes; as well as quality-of-life factors affecting a population. The World Health Organization, for example, defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (16).

Another reason for the difficulty in accounting for the success or failure of the health system through health status is the problems in measurement, once health status has been defined. Because of the intricacies of diseases and peoples' different perceptions, measurement is at best arduous. Also, since health status is affected by other factors outside of the health system, it is difficult to isolate the effects of utilization of health services on health status. Genetics, environment,

and lifestyle also affect health status. Genetics is an immutable factor, but certain aspects of the environment and lifestyle (for example, pollution and smoking) can be changed.

A number of individual measures can be used to set goals and standards and to assess the effectiveness of health services. These include measures of mortality and disability, self-perceived health status, and incidence of diseases. Infant mortality is generally considered a good indicator of health status. The infant mortality rate for the total U.S. population has declined, although rates are not equally low in all geographic areas or all subpopulations (59).

Two measures of health status are considered in this report: (1) the 5-year infant mortality rate for 1969-73 and (2) a composite index constructed through principal component analysis (table 10). The first measure computed as the number of deaths for infants less than 1 year old per 1,000 live births is presented for each of the residence categories. The second index composites three indicators of health: an infant mortality rate, an age-standardized mortality rate, and an age-standardized mortality rate of deaths due to influenza or pneumonia. For the composite index, the higher the value, the better the health status of the area (48).

Table 10--Infant mortality rates and composite health status index by residence

Residence 1/	Infant mortality rate (1969-73)	Composite health status index
	Number per 1,000 live births	U.S. index = 100
Metropolitan	18.8	106.1
Greater	18.8	108.6
Core	19.8	99.0
Fringe	16.2	112.1
Medium	18.5	105.3
Lesser	19.4	104.7
Nonmetropolitan	20.7	98.5
Urbanized		
Adjacent	19.3	103.7
Nonadjacent	20.5	99.8
Less urbanized		
Adjacent	21.0	97.9
Nonadjacent	21.6	98.8
Totally rural		
Adjacent	21.2	96.4
Nonadjacent	21.0	97.7
U.S. total	19.3	100.0

1/ See appendix A for definition of stub items.

Sources: (48, 56).

Both indices show that the health status of metro residents is better than that of nonmetro residents. The high infant mortality rate of 21.6 per 1,000 live births in the less urbanized counties not adjacent to a metro area, compares to a low of 16.2 in fringe counties of greater metro areas. The composite health status index showed that totally rural areas had the worst health status and, again, fringe counties of greater metro areas had the best index.

Another index of health status is the number of disability days due to chronic or acute conditions. Residents of nonmetro areas generally have more disability days due to chronic conditions than metro residents. Metro residents have more disability days due to acute conditions than nonmetro residents (29). One problem with utilizing disability data as a measure of health status is that progress in medical care has resulted in more people surviving formerly fatal illnesses but surviving with some form of disability. Therefore, improved medical care can both decrease and increase disability.

Another method of measuring health status is to survey persons regarding their perceived health status as self-assessed health status relates closely to other indicators of health status. Differences in assessment arise from several socio-economic factors and from place of residence. In 1975, for example, 15.2 percent of the nonmetro residents sampled rated their health as fair or poor, compared with 11.5 percent of metro residents (58).

CURRENT ISSUES

Several factors are involved in determining the needs and direction of the rural health care system. These include the rural-urban turnaround in population, needy subpopulations, increase in the supply of midlevel health practitioners, and the importance of the services industry as a source of employment for nonmetro residents.

Rural-Urban Turnaround

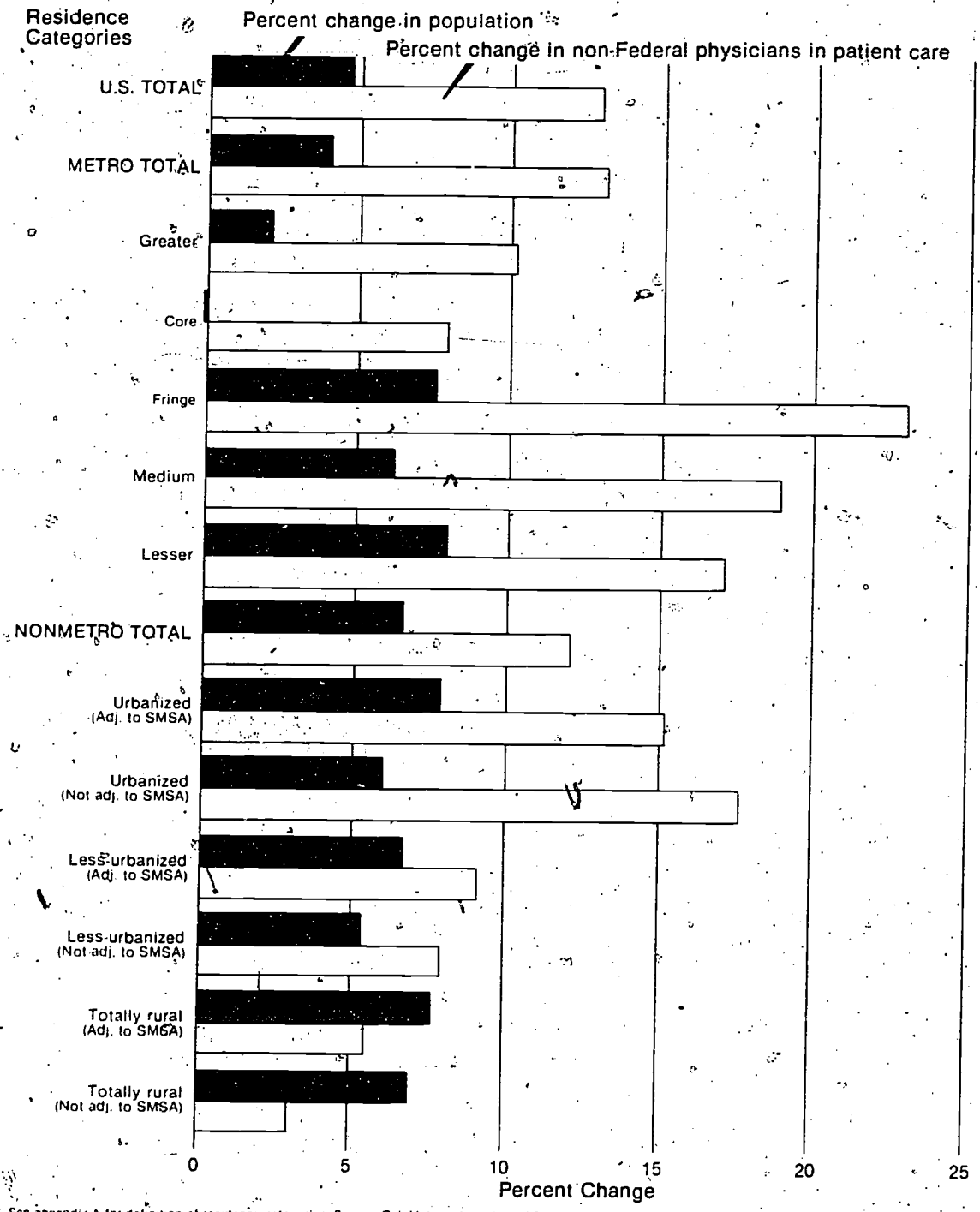
Recent attention has been focused on the termination, and even reversal, of the net migration of the population from rural to urban areas (11). The population, between 1970 and 1975, grew faster in nonmetro areas (6.6) than in metro areas (4.1).

This trend, not limited to counties adjacent to metro areas, can be attributed to: decentralization of industry, increased settlement of retired people, expansion of senior State colleges, increased recreation, and apparently higher birth rates in nonmetro areas (11). This means an added strain on nonmetro area social services. Furthermore, since a major factor affecting this trend is the growth of retirement communities in nonmetro areas and, given the positive relationship between age and need of health care, the strain on the health care systems in these communities becomes intensified (31). However, the change in supply of physicians in nonmetro areas has not matched the change in population as it has in metro areas. The population in some areas grew at a faster rate than the supply of physicians.

The rate of change in the U.S. supply of non-Federal physicians in patient care was more than two-and-one-half times the rate of population change between 1970 and 1975 (fig. 4). The corresponding figure for metro areas was over three times the change in population. However, for nonmetro areas, the rate of change in the supply of physicians was only about one-and-one-half times the rate of population change. The rate of change in the physician supply for totally rural areas did not even keep pace with the rate of population change.

Figure 4

Changes in Population and Supply of Physicians by Residence, 1970-75



See appendix A for definition of residence categories. Source: Calculations based on (4,5)

USDA

Neg. ESCS 71-79 (6)

Needy Subpopulations

Several subpopulations are faced with exceptional hardship: Blacks (particularly in the South), American Indians, migrants, and Appalachians. Each of these groups, as a result of cultural isolation, poverty, and discrimination, have specialized health care needs.

Blacks

Black infant mortality in the United States is almost twice as high as White infant mortality. The South has the greatest infant mortality of all regions, and the difference between Black and White infant mortality is pronounced. Mississippi's White infant mortality rate, for example, was 19.4 infant deaths per 1,000 live births; for Blacks, it was 39.7 in 1974 (23). Infant mortality rates are also higher for Blacks residing in nonmetro areas, and Blacks generally receive less Medicare and Medicaid benefits than the rest of the population (22).

American Indians and Alaskan Natives

American Indian and Alaskan Native health care has improved considerably since the establishment of the Federal Indian Health Service in 1955. However, when compared with the total U.S. population, the health of American Indians and Alaskan Natives is poor. Their life expectancy in 1970 was 65.1 years, compared to 70.9 years for the total U.S. population. The infant mortality rate per 1,000 live births was 19.1 in 1976, compared to 15.2 for the total U.S. population. Accidents, the leading cause of death among American Indians and Alaskan Natives, caused one out of every five American Indian or Alaskan Native deaths in 1976, compared to one out of every 15 deaths for the total U.S. population (60).

Migrants

The Federal Migrant Health Service established migrant health programs in 1962. However, as indicated by an infant mortality rate that is 25 percent higher than the national rate, and high mortality rates caused by infectious diseases, migrants still face critical health care problems. Migrants, including children, are exposed to hazardous work conditions, such as dangerous machinery and harmful chemicals. Many migrant workers are ineligible for Medicaid benefits because they do not meet the definition of the categorically needy and/or residence requirements in some States (66).

Appalachians

Almost all of the Appalachian region is officially classified as medically underserved. The region in 1976 had 158 physicians per 100,000 population, compared to the national rate of 175 physicians for every 100,000 population. Appalachia's infant mortality rate was 6 percent higher than the national average in 1974, but by 1976 there was less than a 1-percent difference between Appalachia and the rest of the United States.

This lower rate was not regionwide, however. Over 25 percent of the Appalachian counties, primarily in Southern and Central Appalachia, had an infant mortality rate which was 1.5 times the average rate for the rest of the country (9). Two contributing factors are the region's difficult terrain and geographic isolation. The Appalachian Regional Commission (ARC), created in 1965 to deal with the region's economic and developmental problems, now serves over 1 million persons.

Midlevel Health Practitioners

There were 5,000 midlevel health practitioners and 4,350 midwives in 1976 in the United States. Midlevel health practitioners include physician assistants and nurse practitioners. Recent studies indicate that practitioners are locating in or near nonmetro areas to a greater extent than physicians (50). Many times a rural community unable to support a full-time physician can support a practitioner. A practitioner, in these communities, may well be the appropriate solution to the health care problems. A resident practitioner can insure basic primary care, health education, and preventive health services.

Increases in midlevel health practitioners should continue to increase because passage of the Rural Health Clinics Law (P.L. 95-210) in 1977 extends Medicare (part B) and Medicaid coverage to services provided by practitioners even in the absence of a physician.

Growth of Service Industry

The health care industry employs almost 6 percent of the total U.S. work force. Service jobs between March 1970 and March 1977 grew 39.4 percent in nonmetro areas, compared to 28.4 percent in metro areas. Nonmetro area change was greater than the change for any industry in either metro or nonmetro areas, mainly because of efforts to improve medical services (32).

CONCLUSIONS

Metropolitan residents have access to more basic and more specialized health services than nonmetropolitan residents. Areas in greatest need, but with the fewest health resources, are totally rural areas.

Solutions other than the traditional "physician in residence" are required to effectively deal with the diversity of problems within rural areas (18). Communities need to examine development of specialized emergency medical transportation and communication capabilities, satellite clinics of hospital and university medical centers, and increase in part-time physicians and primary care health practitioners. More community colleges could be training students for health service careers. Communities can also be active in training residents to serve as emergency medical coordinators to deliver basic first aid until more specialized emergency services are available. Local residents who have a commitment to the community can also be involved in health education and promotion activities.

For more physicians to locate in rural areas, assurance of a salary greater than that of metropolitan physicians may be needed to compensate for the nonmonetary disincentives operating in rural areas (for example, long work hours and professional isolation). The NHSC Program, although small in relation to the need, links incentives with community needs. Public health financing programs have helped to institutionalize and perpetuate within the system the disincentives to locate in a rural area. Physicians are reimbursed at the prevailing rates which are lower in rural areas (14).

A positive development in rural health has been the Federal Government's recognition of rural health problems and the several programs designed to meet these special needs. However, even with this Federal commitment, the rural health system is not on par with that in urban areas. This does not mean, nor is it likely, that an identical system would be appropriate. It does mean that, in recognition of unique rural health care problems, support must be provided for flexible health programs designed to meet these needs and to allow for community-based input. Furthermore, under any national health insurance program, it would be important to recognize the special health needs of rural residents.

APPENDIX A: RESIDENCE CLASSIFICATION SCHEME

I. Metropolitan (SMSA) counties: A Standard Metropolitan Statistical Area is a county or group of contiguous counties with at least one city of 50,000 inhabitants or more, or twin cities with a combined population of at least 50,000. Contiguous counties are included in an SMSA if, according to certain criteria, they are socially and economically integrated with the central city.

1. Greater metro--counties within SMSAs having at least 1 million in population.

   a. Core counties--counties containing the primary central city of greater metro areas.

   b. Fringe counties--suburban counties of greater metro areas.

2. Medium metro--counties within SMSAs of 250,000 to 999,999 in population.

3. Lesser metro--counties within SMSAs of less than 250,000 in population.

II. Nonmetropolitan counties:

1. Urbanized adjacent--counties contiguous to SMSAs and having an aggregate urban population of at least 20,000 residents. Contiguous is defined as geographic contiguity at more than a single point or corner and where at least 1 percent of the labor force commutes to the metro central county for work.

2. Urbanized not adjacent--counties not contiguous to SMSAs and having an aggregate urban population of at least 20,000.

3. Less urbanized adjacent--counties contiguous to SMSAs and having an aggregate urban population of 2,500 to 19,999.

4. Less urbanized not adjacent--counties not contiguous to SMSAs and having an aggregate urban population of 2,500 to 19,999.

5. Totally rural adjacent--counties contiguous to SMSAs and having no urban population.

6. Totally rural not adjacent--counties not contiguous to SMSAs and having no urban population.

APPENDIX B: APPLICATION PROCEDURES

U.S. Department of Health, Education, and Welfare Programs

The first contact in the application procedure for HEW programs is at the regional level. The regional office of HEW will ask the local Health Systems Agency (HSA) for its review and approval before the application is sent to the Federal office to make sure the proposed project is consistent with the health plan. Under OMB Circular A-95, State and areawide planning councils must also review the application in the interest of promoting maximum coordination at all Government levels. Information and requests for application materials are available from the Regional Health Administration, DHEW, at the appropriate regional office. The 10 regional offices are listed below:

Region I — Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island

John F. Kennedy Federal Building
Government Center
Boston, Massachusetts 02203

Region II — New York, New Jersey, Puerto Rico, and Virgin Islands

Federal Building
26 Federal Plaza
New York, New York 10007

Region III — Delaware, Pennsylvania, Maryland, Virginia, West Virginia, and District of Columbia

P.O. Box 13716
Philadelphia, Pennsylvania 19101

Region IV — Tennessee, South Carolina, North Carolina, Georgia, Alabama, Florida, Mississippi, and Kentucky

101 Marietta Towers
Atlanta, Georgia 30323

Region V — Wisconsin, Michigan, Illinois, Indiana, Ohio, and Minnesota

300 South Wacker Drive
Chicago, Illinois 60606

Region VI — New Mexico, Oklahoma, Texas, Arkansas, and Louisiana

1200 Main Tower Bldg.
Dallas, Texas 75202

Region VII Nebraska, Kansas, Missouri, and Iowa

601 East 12th Street
Kansas City, Missouri 64106

Region VIII Montana, Utah, Wyoming, Colorado, North Dakota, and South Dakota

9017 Federal Office Building
19th and Stout Street
Denver, Colorado 80202

Region IX California, Nevada, Arizona, Hawaii, and Guam

Federal Office Building
50 United Nations Plaza
San Francisco, California 94102

Region X Alaska, Idaho, Oregon, and Washington

Arcade Plaza
1321 Second Avenue
Seattle, Washington 98101

Community Facility Loan Program

Program information and the first contact in the application procedure for the USDA Essential Community Facility Loan Program is the Farmers Home Administration (FmHA) county office. That term is misleading in that some offices serve more than one county. (About 1,800 offices serve over 3,000 counties.) The application is processed at the district office, although the entry point is the FmHA county office. Under certain conditions the application must also be reviewed at the Federal level (for example, if the applicant is a nonprofit organization applying for a loan greater than $500,000 or if the organization has existed less than 5 years).

Regional Commission Programs

States within any of the regional planning commissions may make applications to the commissions for local health systems agencies, local governments, and nonprofit organizations. Six of the nine regional commissions have some form of health program. The addresses of the six regional commissions which have health programs are:

Executive Director, Appalachian Regional Commission
1666 Connecticut Avenue, N.W.
Washington, D.C. 20235

Executive Director, Coastal Plains Regional Commission
215 East Bay Street
Charleston, South Carolina 29401

Four Corners Regional Commission
2350 Alamo S.E., Suite 303
Albuquerque, New Mexico 87106

Ozarks Regional Commission
1100 North University Avenue
Suite 109
Little Rock, Arkansas 72207

Upper Great Lakes Regional Commission
504 Christie Building
120 North Fourth Avenue West
Duluth, Minnesota 55802

Old West Regional Commission
201 Main Street, Suite D
Rapid City, South Dakota 57701

APPENDIX C: DESIGNATION CRITERIA

Health-Manpower Shortage Areas (HMSA) are designated by the Manpower Analysis Branch (MAB), Bureau of Health Manpower, Health Resources Administration in the Department of HEW. Any individual or group, including the local Health Systems Agency (HSA) can recommend the designation to the MAB. Upon receipt of an application, the MAB notifies the State Health Planning Board and the local HSA (if the HSA is not the applicant) for their comments.

There are seven possible types of manpower shortage: primary care, dental, psychiatry, vision, podiatry, pharmacy, and veterinary. The shortage criterion for primary care manpower takes into consideration the ratio of population to primary care physicians. The other criteria are whether there is a rational area for delivery of care, population count, midlevel health practitioners, indicators of unusually high needs, and indicators of insufficient capacity. Available resources in contiguous areas are also considered.

Critical values for these criteria were established and were published in the January 10, 1978, Federal Register. Areas not meeting all these criteria can be excluded from designation. Designated areas are also categorized into four groups dependent not only on the population to physician ratio, but also on the special need of the population and capacity of existing resources. The latest designations were published in the July 17 and September 28, 1978, Federal Register.

For further information, contact:

Manpower Analysis Branch
Bureau of Health Manpower
U.S. Department of Health,
Education, and Welfare
3700 East-West Highway
Center Building, Room 4-41
Hyattsville, Maryland 20782

Medically Underserved Areas (MUAs) are designated by the Division of Monitoring and Analysis, Bureau of Community Health Services (BCHS), Health Services Administration in the Department of HEW. The value of the Index of Medical Underservice (IMU) is calculated for every area in the United States and is used to determine a MUA. The weighted index considers: (1) number of primary-care physicians per 1,000 people, (2) infant mortality rate, (3) percentage of people in poverty, and (4) percentage of population 65 years and older.

The 1975 median IMU score for all U.S. counties, 62.0, was used as the cutoff point between underserved and adequately served areas, although it is no longer the median value. If a local HSA finds that an area is not on the MUA list but does in fact have an IMU of 62.0 or below, the HSA then sends the required information to the Division of Monitoring and Analysis. The local HSA is the only party which can recommend that an area be designated. Areas which are designated as HMSA are automatically designated as MUAs. The MUA list, continually revised and updated regularly by the BCHS, was last published in the October 15, 1976, Federal Register but an updated list is forthcoming. In that same Federal Register, the information required from an HSA is spelled out and the procedure for determining the weighted IMU is supplied.

For further information, contact:

Division of Monitoring and Analysis
Bureau of Community Health Service
U.S. Department of Health,
Education, and Welfare
5600 Fishers Lane
Rockville, Maryland 20857

High Infant Mortality Areas (HIM) are designated by the Division of Monitoring and Analysis, Bureau of Community Health Services, Health Services Administration in the Department of HEW. The designations are based on the 5-year infant mortality rate from 1971 through 1975. In areas (city or county) with more than 2,000 live births within the 5-year period, the infant mortality rate must be equal to or exceed 22.1 deaths per 1,000 live births in order to be designated. The rate must be equal to or exceed 22.1 deaths per 1,000 live births at the 5-percent level of significance in areas with less than 2,000 live births. An area may also be designated if more than 400 infant deaths occur in excess of an infant mortality rate of 11.5 deaths per 1,000 live births.

For further information, contact:

Division of Monitoring and Analysis
Bureau of Community Health Service
U.S. Department of Health,
Education, and Welfare
5600 Fishers Lane
Rockville, Maryland 20857

High Impact Areas (HIA) are designated by the Migrant Health Service, Bureau of Community Health Services, Health Systems Agency in the Department of HEW. Such areas are defined as having at least 4,000 migrants and/or seasonal farmworkers and their families for at least 2 months of the year. The designation is presently based on the 1973 county population and updated continuously. An individual or group can notify the Migrant Health Service if they believe an area qualifies but is not so designated.

For further information, contact:

Migrant Health Service
Bureau of Community Health Service
U.S. Department of Health,
Education, and Welfare
5600 Fishers Lane
Rockville, Maryland 20857

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